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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,805

05/18/2006

Takashi Kenmoku

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3465

5514

7590

12/31/2008

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EXAMINER

FANG, SHANE

ART UNIT

PAPER NUMBER

4131

MAIL DATE

DELIVERY MODE

12/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,805	Applicant(s) KENMOKU ET AL.	
	Examiner SHANE FANG	Art Unit 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,5 and 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-11 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/18/06,06/22/07,04/11/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed on 10/03/2008. Claims 1, 4, and 6-7 of Group I have been elected with traverse. Since claim 2 of Group II requires a more special search for more specific limitations, claim 2 will not be rejoined with Group I. This election/restriction is made as final.

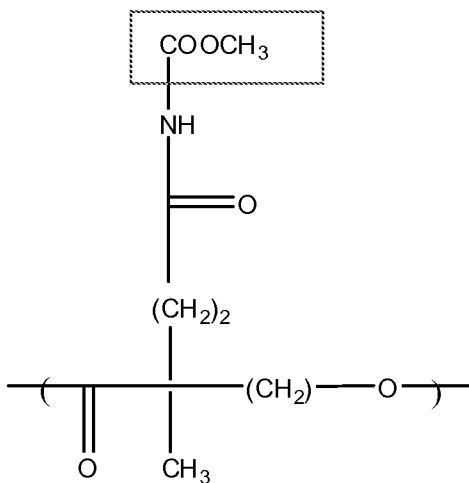
Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

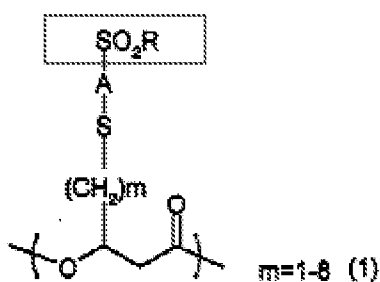
3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Martin et al. (US 6083729 A)** in view of **Kenmoku et al. (EP 1336635 A1)**.

Martin et al. discloses species of polyhydroxyalkanoate (PHA) prepared from repeating units (Claim 4), shown as the following example:



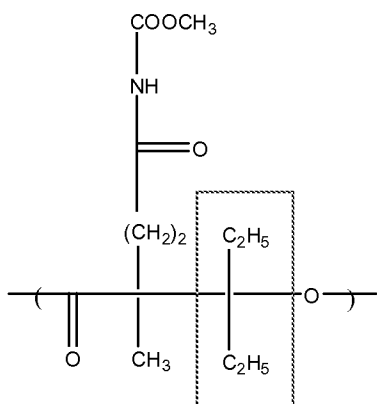
The difference is in the application the particular inclusion of the sulfonyl unit (-A₁-SO₂R₁) in the end of side chain on formula (1) as recited in claim 1.

Kenmoku et al. discloses PHA containing sulfonic group as a hydrophilic group or a derivative thereof (sulfonyl unit) introduced for improving melt processebility (motivation, Pg. 8, [0020]), as shown in the end of side chain of the following structure (-SO₂ group, [0023]):



Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated disclosures of *Martin et al.* and *Kenmoku et al.* to develop a PHA containing repeating units as recited in formula (1) in claim 1. The suggestion/motivation would have been to improve the melt processebility of PHA.

As to claim 4, *Martin et al.* discloses the species of polyhydroxyalkanoate (PHA) prepared from repeating units (Claim 4), shown as the following example:



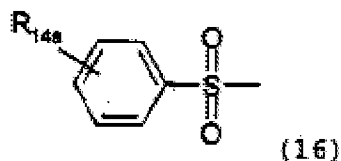
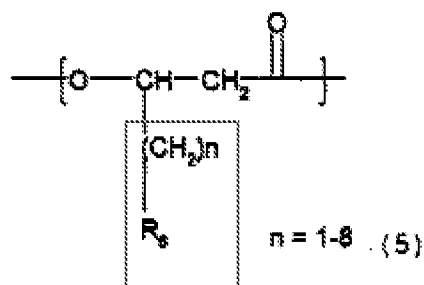
The highlighted group reads on claim 4.

4. Claim 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Martin et al. (US 6083729 A)** in view of **Kenmoku et al. (EP 1336635 A1)**.

Disclosure of *Martin et al.* is adequately set forth in paragraph 2 and is incorporated herein by reference.

Martin et al. fails to disclose pendent groups in the end of side chain on formula (1) as recited in claim 1, 6-7.

Kenmoku et al. discloses PHA containing sulfonic group as a hydrophilic group or a derivative thereof (sulfonyl unit) introduced for improving melt processeability (motivation, Pg. 8, [0020]) shown in the end of side chain of the following structure (-highlighted, Pg. 8, 10, [0023]):



Note, R_6 can be formula (16) and $n=1-8$ ([0023]). Formula (16) and highlighted part of formula (5) read on claims 6-7.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated disclosures of *Martin et al.* and *Kenmoku et al.* to develop a PHA containing repeating units as recited in formula (1) in claim 1 and pendent groups recited in 6-7. The suggestion/motivation would have been to further improve the melt processeability of PHA.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANE FANG whose telephone number is (571)270-7378. The examiner can normally be reached on Mon.-Thurs. 8 a.m. to 6:30 p.m. EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/

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Primary Examiner, Art Unit 1796

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